Neuron

View

Low latency, high quality, live production multiviewer with SDI or IP I/O

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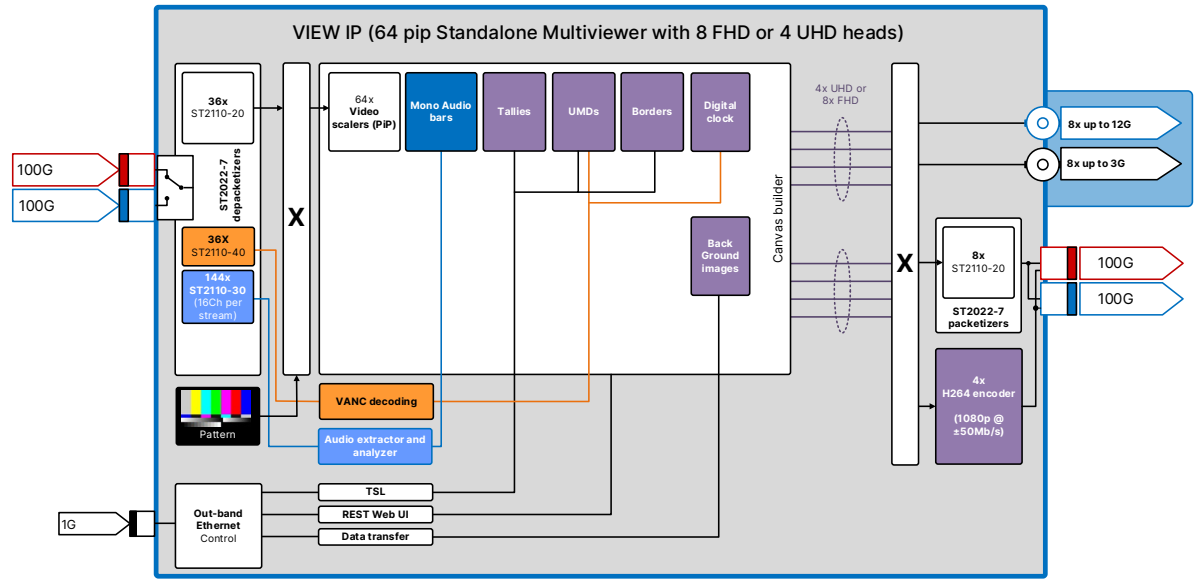
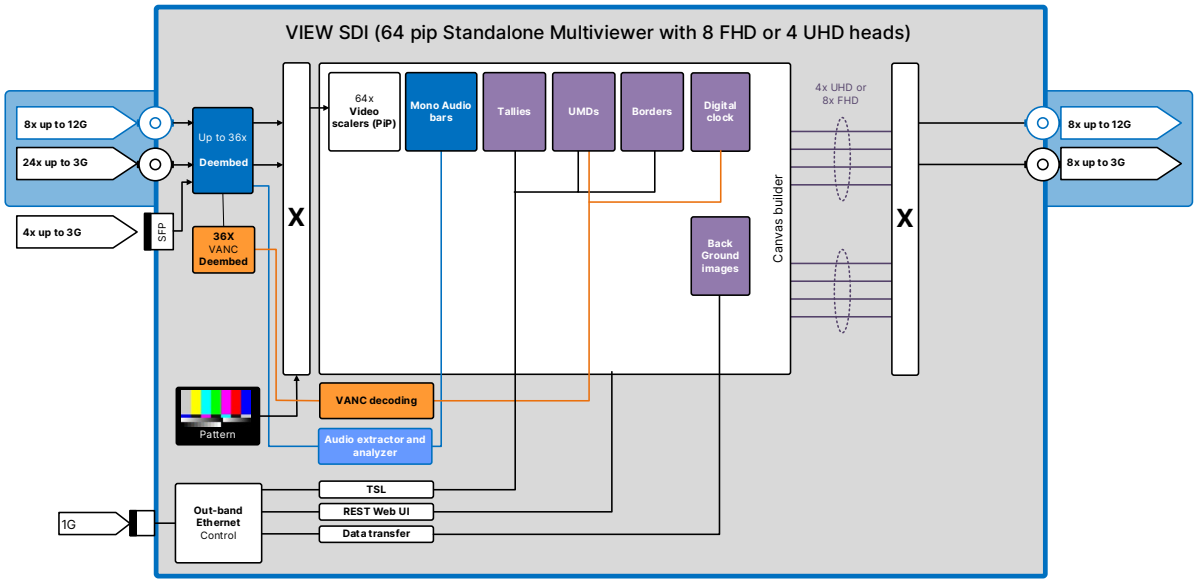
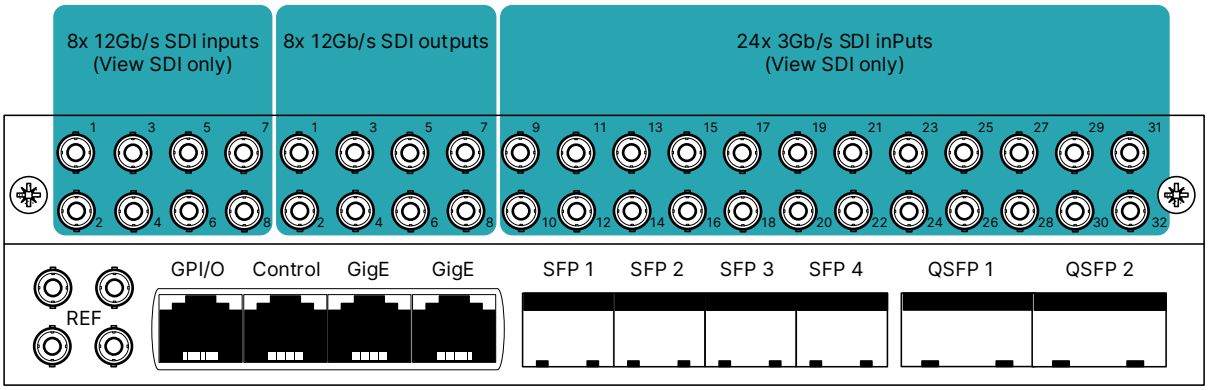
Block schematics of configurations





I/O Panel



Neuron **View IP** offers 36x ST2110-20 and -40 IP inputs, 144x ST2110-30 audio inputs and up to 8x ST2110-20 and/or SDI outputs (SDI outputs require the SDI expansion board and license).

Neuron **View SDI** offers 36x (F)HD or 8 UHD (or a mix) SDI inputs and up to SDI outputs (SDI I/O requires the SDI expansion board and license).

In the interface you can choose which multiviewer head goes to which 12Gb/s or 3Gb/s SDI output and to which IP output stream.

In addition to the SDI and/or IP outputs, there's an option for 4x 1080p H264 output streams (50Mb/s proxies).

I/O of configurations

	SDI Inputs[1]	IP Inputs[1]	SDI Outputs[1]	IP outputs[1]	H264 output streams (1080p)
VIEW IP (VMI3208)	0	36x ST2110-20/-40 144x ST2110-30	Up to 8[2]	Up to 8	Up to 4
VIEW SDI (VMS3208)	36[2]	0	Up to 8[2]	0	0

[1]) Amount of FHD (1080p50/59.94) channels
[2]) Requires the SDI expansion board and license to be installed

Features

When it comes to low-latency, flexibility and ease of use, there is no multiviewer that compares to Neuron View.

View's unequalled low latency, start-up times, and low power consumption makes it ideal for a wide range of multiview applications, from preview monitoring and shading in small OB-vans, to high resolution, high source count monitor walls for the largest live-production facilities.

With the intuitive, on-board, web-based graphical user interface you can change the layout of all multiviewer screens on-the-fly and in real-time. You do not need a separate application to design your canvases. With this GUI you can also save and load snapshots, change the scale, layout and composition of each PIP, configure your IP I/O streams, and configure which PiP displays which group of IP (-20, -30, and -40) streams or which SDI input.

Neuron View's outputs can be configured in many ways between 8 FHD outputs and 4 UHD outputs, all as ST2110-20 IP output streams (**View IP**), as both IP as well as SDI outputs (**View IP** with **SDI expansion**) or as SDI-only outputs (**View SDI**). The possible output head configurations are: 1x UHD + 7x FHD, 2x UHD + 6x FHD, 3x UHD + 4x FHD, 4x UHD or 8x FHD. It accepts up to 36 FHD, up to 8 UHD, or a mix of FHD and UHD SDI or IP inputs per board, which can all be displayed in as many different sizes as required in 64 PiPs divided over all output heads. In addition to the SDI and/or IP outputs, there's an option for 4x 1080p H264 output streams (50Mb/s proxies) which are streamed over the boards 1G RJ45 "Control" port.

With Neuron View you also enjoy ultimate flexibility, since it is built on the same processing board as all other Neuron identities: Bridge, Convert, Compress, Protect and Shuffle. In other words, you only need one platform to cover all infrastructural challenges.

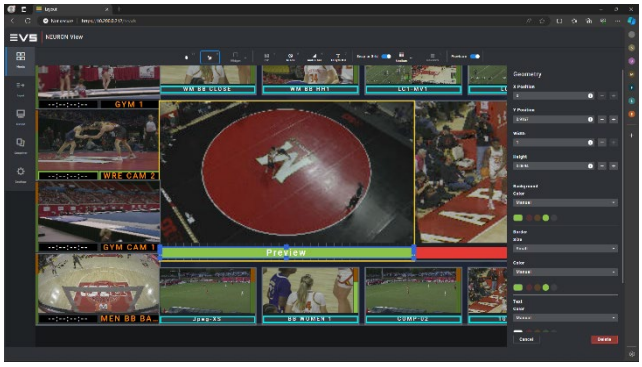
- Standards supported: UHD (4 wire SQD/2Si or single wire 2SI), FHD Level-A and HD ST2110-20 on 50Hz and 59.94Hz. (2160p, 1080p, 1080i and 720p)
- **View IP** only: Ability to receive 36x IP video (ST2110-20), 36x timecode (ST2110-40) and 144x IP audio (ST2110-30, 16 channels of audio each) inputs via 2x QSFP28 true 100Gb/s single MAC
- **View IP** only: PTP Network timing with slave functionality on the Ethernet ports, compliant with SMPTE ST2059-2 (BMCA)
- **View SDI** only: Ability to receive 36 FHD/HD SDI input (of which 4 via MSA-compliant video SFP modules) or 8 UHD SDI inputs (single wire 12G) or a mix.
- **View SDI** only: SDI ancillary data de-embedding (ST12M ATC_VITC/ATC_LTC)
- **View IP only, optional:** 4x H264 encoded 1080p "proxy" outputs of up to 4 heads. (50Mb/s transport streams)
- **Optional:** Dreamcatcher OSD overlay
- External black burst input
- Displays up to 64 picture-in-pictures of video with multiple tallies, UMDs and audio meters per PIP, divided over all outputs
- Transparency setting for each graphical element (UMD, audio meters, tallies, etc.)
- 1x UHD + 7x FHD, 2x UHD + 6x FHD, 3x UHD + 5x FHD, 4x UHD or 8x FHD heads on IP (ST2110-20) and/or SDI (depending on the chosen View identity)
- Display a mix of asynchronous HD, FHD and UHD sources on FHD/UHD displays simultaneously
- High quality image processing and scaling
- Ultra-low latency between input and output (20ms@50Hz and 16.7ms@59.94Hz)
- Extremely low power consumption compared to CPU based multiviewers
- Up to 256 channels of audio metering, freely assignable to PIPs or separate widgets
- Audio Metering via VU scales
- Any number of UMDs and Tallies per PiP, controllable through TSL, ImageVideo and REST API
- Up to 32 Digital clocks and up/down counters
- NTP clock synchronization
- Colored borders
- User definable backgrounds using a color picker for solid color, or image upload (.png)
- Redundant IP input signals (ST2022-7 class D)
- Redundant IP output signals (ST2022-7 compliant port replication)
- Inband control
- Static routing
- Compatible protocols: ACPv2, DNS, IGMPv2, IGMPv3, LLDP, DHCP, SDP, NMOS IS-04, NMOS IS-05, 802.1as, ST2059, ST2110-20/30/40, TSL v5

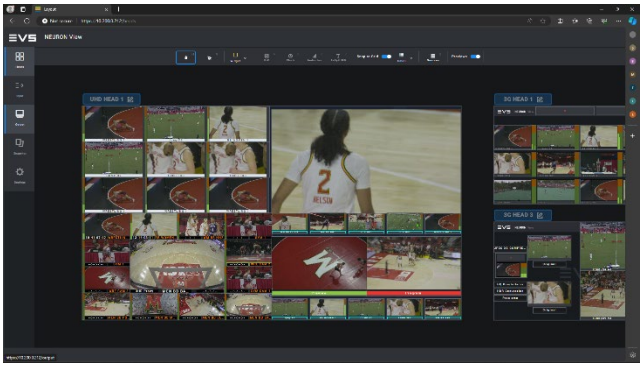
Applications

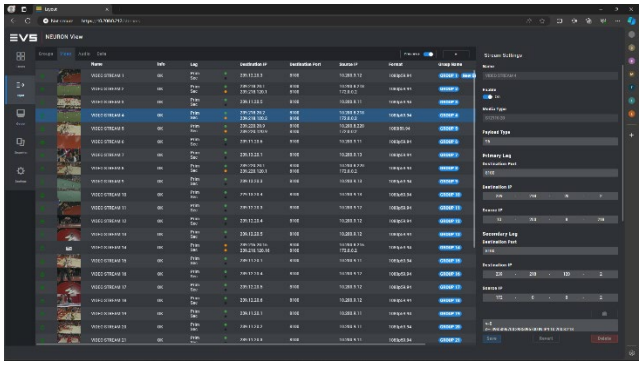
- Monitor walls in Live production facilities
- Monitor walls in OB-Vans and fly-packs
- Multi-output setups for shaders, operators and directors on one Multiview platform

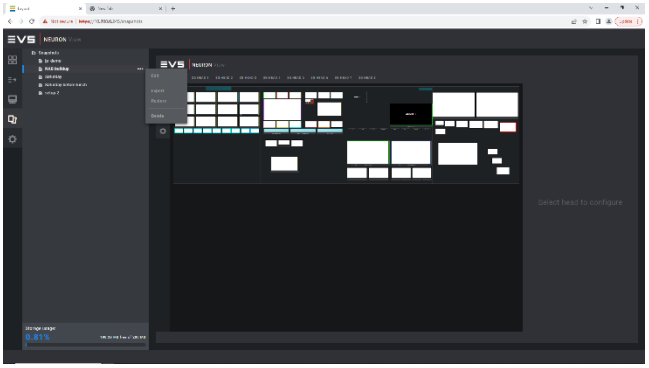
Web-UI screenshots

The View web UI is easily accessible by typing in the board's IP address in a web-browser. It allows you to set up and configure the layout of all heads on-the-fly and in real-time in an easy-to-use, intuitive GUI.









Ordering information

Neuron Hardware	
NEU-1U-FR2000-B	**1RU Neuron Frame** with redundant 90-265VAC power supply, **Broadcast version** (rear side I/O). Can hold up to 2x NEU-BASE-BOARD
NEU-1U-FR2000-D	**1RU Neuron Frame** with redundant 90-265VAC power supply, **Data center version** (front side I/O). Can hold up to 2x NEU-BASE-BOARD
NEU-1U-RSK	**Rear Suspension Kit** for 1RU Neuron frame. Supports rack depth between 48cm (18.9") and 80cm (31.5")
NEU-BASE-BOARD	**Neuron base processing board**. Customer to supply QSFP/SFP. Requires at least one of the base licenses listed below
NEU-SDI40-BOARD	**Neuron 40 SDI I/O expansion board** with 8 x 12G in, 8 x 12G out and 24 x FHD bidirectional I/O on HD BNC. Requires NEU-BASE-BOARD
VIEW Base license	
NEU-VIEW-GO	**Base License** for **View IP or View SDI**. Live production multiviewer with 36 HD or 8 UHD (or a mix) inputs, up to 64 pips, audio bars, 4x UHD or 8x FHD Heads. Max. **1** of these base licenses per processing board
VIEW additional options	
NEU-V-H264-CDC-GO	License to enable H.264 encoding (can be used for up to 4× 1080p 50Mb/s output streams), works on **View IP only**, max 1 per board
NEU-OSD-DREAM-GO	License for overlay visualization of Dreamcatcher superout data, max 1 per board

Specifications

Analog reference I/O

Connector Type	Micro BNC (HD-BNC)
Number of inputs	1
Number of outputs	1, Loop input
Termination	75 Ohms when not looped
Bi-Level	PAL/NTSC Black Burst ITU624

PTP reference

Standard	ST2059/ST2110-10 (profile PTP-L3-E2E)
Number of inputs	2

Gigabit Ethernet

Connector Type	RJ45
Standards	10/100/1000 Base-T
Protocol control	ACPv2, REST API, tally protocols
Cable	Shielded twisted pair

QSFP Cages

Number of cages	2
Standards	QSFP28, 100GbE
Protocols	ST2110, ST2059

SFP Cages

Number of cages	4 (not used for View)

Video inputs

Format	2160p59.94/50 (single wire 12G), 1080p59.94/50, 1080i59.94/50, 720p59.94/50
Standard	ST2110-20 (uncompressed video)
Number of inputs	8 UHD or 32 FHD unscaled pictures, or a mix

Picture in Picture (PIP)

Number	64 (freely assignable to any input)

Video outputs (Heads)

Format	2160p59.94/50 (single wire 12G or 4-wire SQD), 1080p59.94/50
Standard	ST2110-20, SDI
Number of heads	2 UHD or 8 FHD or mix (upgradable with 2 outputs)

Graphical objects

Background	Color picker, user defined (PNG), HTTP to onboard storage
Clocks	Digital
Time sources	PTP, input timecode, up/down counter

UMD/Tally

Protocol	TSL 5.0 (UDP), Image Video, ACPv2, REST API
Tally Show as	Element color (border, background or text color)

Audio input

Standard	ST2110-30 (PCM Audio, Level A/B/C)
Number of streams	144
Number of audio bars	5000+ (freely assignable)
Audiometer style	AES-EBU

Metadata input

Standard	ST2110-40 (Timecode only)
Number of streams	32

Miscellaneous

Weight	Approx. 2050gr
Operating temp.	0°C to +40°C
Dimensions	400 x 193 x 42mm (LxWxD)

Electrical

Voltage	+12V nominal (tolerance:-1V/+0.5V)
Power	~100Watts